

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kenneth E. Radcliffe on 15 July 2010.

In claims: please replace current amendment with below claimed amendment:

Claim 1 (currently amended): A bandwidth-adaptive method for synchronizing display data between a source node and a plurality of consumer nodes, the method comprising:

(a) identifying, by a source node that comprises a processor, a change in local display data;

(b) creating, by the source node, at least one data packet representing the change in local display data;

(c) receiving, by a communications service from the source node, a metadata packet identifying each of ~~the~~ data packets that represent a current state of local display data following the change in local display data, the metadata packet being indicative of the data packets required by a consumer node to synchronize the consumer node's display data with the source node's local display data, and the metadata packet being a separate packet from ~~the~~ identified data packets;

(d) receiving, by the communications service from the source node, at least one of the identified data packets;

(e) selecting, by the communications service, first and second sets of the identified data packets responsive to the received metadata packet, the first and second sets being different from

one another, the first set being all the data packets identified by the metadata packet less the data packets already transmitted to a first consumer node, and the second set being all the data packets identified by the metadata packet less the data packets already transmitted to a second consumer node having a different bandwidth connection with the communication service than the first consumer node has with the communications service;

(f) transmitting, by the communications service to the first consumer node, the metadata packet followed by the first set of identified data packets;

(g) transmitting, by the communications service to the second consumer node, the metadata packet followed by the second set of identified data packets, whereby the first and second consumer nodes are transmitted a common metadata packet, but different data packets along therewith; and

(h) repeating steps (a) through (d) until a consumer node receives further data packets from the communications service.

Claim 2 (previously presented): The method of claim 1 further comprising receiving, by the communications service prior to selecting a set of the identified data packets responsive to the received metadata packet, a request from a consumer node for the current state of the source node local display data.

Claim 3 (currently amended): The method of claim 1, wherein steps (a) through (d) are repeated until a request is received from a consumer node for the current state of the source node local display data.

Claim 4 (currently amended): The method of claim 3 wherein, following the repetition of steps (a) through (d), selecting a set of the identified data packets responsive to the received metadata packet comprises:

(e-a) selecting one of the metadata packets received by the communications service; and
(e-b) selecting at least one of the data packets received by the communications service and identified by the selected metadata packet.

Claim 5 (previously presented): The method of claim 1 wherein selecting a set of the identified data packets responsive to the received metadata packet comprises selecting a plurality of the identified data packets responsive to the received metadata packet.

Claim 6 (previously presented): The method of claim 5 wherein transmitting to the first consumer node the first set of identified data packets comprises transmitting to the first consumer node a first plurality of data packets selected therefor, and wherein transmitting to the second consumer node the second set of identified data packets comprises transmitting to the second consumer node a second plurality of data packets selected therefor.

Claim 7 (previously presented): The method of claim 1 wherein receiving, by the communications service from the source node, the at least one of the identified data packets comprises receiving, by the communications service from the source node, at least one of the identified data packets in encrypted form.

Claim 8 (currently amended): The method of claim 1 further comprising storing the metadata packets received by the communications service in a memory device.

Claim 9 (previously presented): The method of claim 1 further comprising storing at least one of the data packets received by the communications service in a memory device.

Claim 10 (currently amended): The method of claim 9 further comprising selecting at least one of the stored data packets responsive to a metadata packet received by the communications service.

Claim 11 (previously presented): The method of claim 10 further comprising transmitting to one of the first and second consumer nodes the selected at least one of the stored data packets.

Claim 12 (previously presented): The method of claim 1 further comprising storing, in a memory element, information identifying a data packet transmitted to one of the first and second consumer nodes.

Claim 13 (currently amended): The method of claim 12 further comprising selecting at least one of the data packets received by the communications service that is responsive to a metadata

packet received by the communications service and to the stored information identifying the data packet transmitted to the one of the first and second consumer nodes.

Claim 14 (currently amended): A bandwidth-adaptive system for synchronizing display data between consumer nodes and a source node, the system comprising:

a source node comprising a processor, the source node configured to i) identify a change in local display data, ii) create at least one data packet representing the change in local display data, iii) create a metadata packet identifying each of the data packets that represent a current state of the local display data following the change in local display data, the metadata packet being indicative of the data packets required by a consumer node to synchronize the consumer node's display data with the source node's local display data, and the metadata packet being a separate packet from the identified data packets, and iv) transmit the metadata packet followed by at least one of the identified data packets; and

a communications service in communication with the source node, the communications service configured to

- (a) select a first set of the identified data packets for transmission, following the metadata packet, to a first consumer node, the first set being all the data packets identified by the metadata packet less the data packets already transmitted to the first consumer node, and a second set of the identified data packets, different from the first set, for transmission, following the metadata packet, to a second consumer node having a different bandwidth connection with the communications service than the first consumer node has with the communications service, the second set being all the data packets identified by the metadata packet less the data packets already transmitted to the second consumer node; and
- (b) transmit the metadata packet and the first and second sets of identified data packets such that the first and second consumer nodes are transmitted a common metadata packet, but different data packets along therewith,

wherein the source node is further configured to repeat a) through b) until a consumer node receives further data packets from the communications service.

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Claim 15 (previously presented): The system of claim 14 further comprising the first consumer node, the first consumer node configured to request the current state of the source node local display data from the communications service.

Claim 16 (previously presented): The system of claim 15 wherein the communications service is further configured to select the first set of identified data packets in response to the request made by the first consumer node.

Claim 17 (previously presented): The system of claim 15 further comprising the second consumer node, the second consumer node configured to request the current state of the source node local display data from the communications service.

Claim 18 (cancelled)

Claim 19 (cancelled)

Claim 20 (previously presented): The system of claim 14 wherein the communications service further comprises a memory element.

Claim 21 (original): The system of claim 20 wherein the memory element is a persistent storage device.

Claim 22 (currently amended): The system of claim 20 wherein the communications service is further configured to store the metadata packets in the memory element.

Claim 23 (previously presented): The system of claim 20 wherein the communications service is further configured to store at least one identified data packet in the memory element.

Claim 24 (previously presented): The system of claim 20 wherein the communications service is further configured to store in the memory element information regarding transmission of data packets to at least one of the first and second consumer nodes.

Claim 25 (previously presented): The system of claim 14 wherein the source node is further configured to encrypt a data packet before transmission.

Claim 26 (cancelled)

Claim 27 (previously presented): The method of claim 1 further comprising making, by the source node, an outgoing socket connection to the communications service.

Claim 28 (previously presented): The method of claim 1 wherein the source node and the communications service operate on the same hardware.

Claim 29 (previously presented): The system of claim 14 wherein the source node is further configured to make an outgoing socket connection to the communications service.

Claim 30 (previously presented): The system of claim 14 wherein the source node and the communications service operate on the same hardware.

Allowable Subject Matter

Claims 1-17, 20-25 and 27-30 are allowed.

As to claim 1, none of the available prior art of record teaches or fairly suggests:

(b) creating, by the source node, at least one data packet representing the change in local display data;

(c) receiving, by a communications service from the source node, a metadata packet identifying each of data packets that represent a current state of local display data following the change in local display data, the metadata packet being indicative of the data packets required by a consumer node to synchronize the consumer node's display data with the source node's local display data, and the metadata packet being a separate packet from identified data packets;

(d) receiving, by the communications service from the source node, at least one of the identified data packets;

(e) selecting, by the communications service, first and second sets of the identified data packets responsive to the received metadata packet, the first and second sets being different from one another, the first set being all the data packets identified by the metadata packet less the data packets already transmitted to a first consumer node, and the second set being all the data packets identified by the metadata packet less the data packets already transmitted to a second

consumer node having a different bandwidth connection with the communication service than the first consumer node has with the communications service;

(f) transmitting, by the communications service to the first consumer node, the metadata packet followed by the first set of identified data packets;

(g) transmitting, by the communications service to the second consumer node, the metadata packet followed by the second set of identified data packets, whereby the first and second consumer nodes are transmitted a common metadata packet, but different data packets along therewith.

As to claim 14, none of the available prior art of record teaches or fairly suggests create a metadata packet identifying each of data packets that represent a current state of the local display data following the change in local display data, the metadata packet being indicative of the data packets required by a consumer node to synchronize the consumer node's display data with the source node's local display data, and the metadata packet being a separate packet from identified data packets, and iv) transmit the metadata packet followed by at least one of the identified data packets; and

a communications service in communication with the source node, the communications service configured to

(a) select a first set of the identified data packets for transmission, following the metadata packet, to a first consumer node, the first set being all the data packets identified by the metadata packet less the data packets already transmitted to the first consumer node, and a second set of the identified data packets, different from the first set, for transmission, following the metadata packet, to a second consumer node having a different bandwidth connection with the communications service than the first consumer node has with the communications service, the second set being all the data packets identified by the metadata packet less the data packets already transmitted to the second consumer node; and

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(b) transmit the metadata packet and the first and second sets of identified data packets such that the first and second consumer nodes are transmitted a common metadata packet, but different data packets along therewith,

wherein the source node is further configured to repeat a) through b) until a consumer node receives further data packets from the communications service.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL KIM whose telephone number is (571)272-2737. The examiner can normally be reached on M-F, 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tony Mahmoudi can be reached on (571) 272-4078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cam Y Truong/
Primary Examiner, Art Unit 2169